

PROPOSITIONS

TO THE THESIS

THE MATRIX RELOADED: CREATING LIVER TISSUE USING MATRIX AND ORGANOIDS

BY JORKE WILLEMSE

1. Pressure controlled perfusion leads to more efficient decellularization of whole human liver grafts. – *This thesis*
2. Addition of the detergent sodium dodecyl sulfate leads to more loss of collagens and sulfated glycosaminoglycans during decellularization. – *This thesis*
3. Cholangiocyte organoids can repopulate decellularized bile duct extracellular matrix in vitro and re-create a functional barrier. – *This thesis*
4. The use of liver extracellular matrix does not improve the differentiation potential of cholangiocyte organoids towards hepatocytes. – *This thesis*
5. Hydrogels derived from liver extracellular matrix can replace mouse tumor-derived basement membrane extracts for the culture of cholangiocyte organoids. – *This thesis*
6. Failure to completely decellularize a tissue leads to negative outcomes after *in vivo* implantation, including a pro-inflammatory response and fibrosis. – *Faulk, D.M., Journal of clinical and experimental hepatology 5.1 (2015): 69-80.*
7. Cholangiocytes from different regions of the biliary tree are interchangeable and this suggest that extrahepatic cells can be used to repair acute intrahepatic duct injury. - *Sampaziotis, F, Science 2021; 371.6531, 839-846.*
8. Tissue engineering remains a promising solution to the chronic organ shortage but has been significantly inhibited by the lack of functional vasculature required to support the implantation of engineered tissue. – *Shaheen, M.F., Nature biomedical engineering 4.4 (2020): 437-445.*
9. An expert is a person who has made all the mistakes that can be made in a very narrow field – *Niels Bohr*
10. Give us the tools, and we will finish the job – *Winston Churchill*
11. To infinity and beyond – *Woody from Toy Story*